

REMARKS OF DR. H. B. BATTLE IN THE FARMERS' ASSOCIATION ON THE REPORT OF THE COMMITTEE ON THE STATE DEPARTMENT OF AGRICULTURE.

"I conceive the object for which experimental work is desired, and the benefits that will be expected to accrue from it in the future to the masses of the people throughout the State is that material aid will be given in the advancement of the farming class and in the advancement of agriculture as a profession. And the work to be carried on should have for its object whatever would best advance the agricultural class. The needs of various States are widely different, and no similar work can be conducted at once adapted to the requirements of all the States. The work must be varied to suit the needs of those living in the various sections. The requirements of New Yorkers are not the requirements of North Carolinians, nor are the needs of the people of North Carolina the same as those of the people of Maine. As a rule, especially in the cotton States, these needs in my opinion can best be fitted by an influence educating in its character—by teaching the people the knowledge they most lack in the proper conduct of their farming operations. This can be done by disseminating information obtained best by work in this State (for here it will have the best effect) or through information from any other source, if this cannot be done. This work should include that which would prove the most practical, and give the most immediate relief as far as possible to the farming class.

The opinion as given in the last sentence is shared by a number of our representative farmers in various portions of the State with whom I have corresponded on the subject; and I have every reason to believe that it is held by all of our people.

It is not my idea for the purely scientific work which would not bring quick returns to be excluded, but should at present, until the masses are ready to digest them, be subordinate to that more practical in character.

With this preface the following plan for experimental work, more especially adapted to this State, will better be understood.

The work, in my opinion, that would be best to undertake, should be as I have said—entirely practical in its character, and such as would give the most immediate and beneficial results for the use of our farmers, and should include

1. The effect of fertilizers on various soils and crops, carried on in conjunction with the experiment station by individual farmers throughout the State. With such a diversity of soil and climate as this State possesses, this is a necessity to obtain results of value.

2. The best system for the rotation of crops, and the effect of the time of planting of each.

3. The best treatment of worn-out lands to render them productive.

4. A study of the cultivation of the staple crops looking to the improvement in the present system.

5. The utilization of waste farm products in the manufacture of fertilizers and composts; and the examination of natural products for the same object.

6. Investigation as to the growth of other crops than those now planted, to ascertain if more valuable crops might be substituted in part or in whole for those we now have. Such investigation might include among others the study of sorghum as to the best practical plan for planting, gathering, expressing and utilizing the juice; the growth of root crops; the growth of plants yielding fibre, such as ramie, jute and the best plan for preserving the fibre; a study of the various grasses of value; to ascertain how far the raising of hay can supersede the planting of cotton and other staple crops so exhausting to the soil.

7. Experiments relative to the feeding value of the various forage crops grown in this locality, also of the grasses now grown or proposed to be grown in this State, and to instruct our farmers in the value of the standard hays and grasses, of the nutritive value of each; and to determine from the analysis of the plants grown in this latitude the proper ration for work, brood and fattening cattle, using the recognized feeding standards to that end.

8. The construction of the silo and the preservation of green forage crops as ensilage, and the comparative merits of the latter with forage in the dry state.

9. Digestion experiments with milk

cows, and the amount of milk obtained, with chemical analysis of same. Also digestion experiments with other stock.

10. A study of the temperature of the soil to ascertain how far it effects the growth of the crop.

11. Meteorological observations in conjunction with the various work carried on in other lines of investigation.

12. Investigation of the chemical constituents of the standard crops in the various stages of their growth—of cotton, corn and tobacco; and the growth of the roots of these crops as determined by root washing.

A few of these have been carried on during the past two years, and are now in progress. The list might be largely increased, for the subject is an immense one, and fruitful, with possibilities for good in every section throughout the State.

I have merely given these experiments as types of the work which, in my opinion, should be undertaken.

CO-OPERATION IN STOCK RAISING.

Annually, thousands of horses and mules are brought into North Carolina for sale, and tens of thousands of dollars are taken from the pockets of our people to enrich the stock raisers of other States. This should not be; North Carolina should raise not only every horse and mule needed within her borders, but should raise a surplus of at least ten thousand to supply other markets.

The cost of raising a mule until three years old is about seventy dollars; of a draft horse one hundred dollars, and of a thorough-bred or trotter one hundred and thirty dollars. This is not cash paid out, but it is the value of things every farmer raises that he does not sell or finds it inconvenient to market. Besides, a horse or mule well raised is worth twenty-five per cent. more than one that is not. We are now paying \$140.00 to \$200.00 for mules, \$150.00 to \$250.00 for draft horses and \$200.00 to \$450.00 for thoroughbreds and trotting horses. This is hard cash, raised from crops that often have little more than part the expense of cultivation, and not unfrequently it is cash raised by a mortgage that forever after clings to us closer than a brother.

I once knew two brothers—both small farmers—one year one raised four hogs that netted him over eight hundred pounds. When asked what they cost him, replied:

"Not much. Some corn in the winter; in spring, summer and fall they were fed on slop and refuse from the garden, faulty fruit, cut clover, grass and weeds, and some corn for four or five weeks before killing."

Observe, this meat was produced on such things as it was inconvenient to sell or could not be sold at all.

The other brother raised no hogs, and it required over eighty dollars of hard, cold cash to supply him with meat; and the labor expended by him in raising the cash must have been fourfold greater than the one who raised the hogs.

The same ratio will hold good in horse raising or mule raising. It is the attention paid to utilizing everything on the farm that makes it pay. He whose eyes can only see "bales of cotton," will be blinded by a mortgage sooner or later.

Many farmers would raise horses or mules if stallions or jacks were convenient to them. These animals cost large sums, and but few of our farmers are able to buy them. If the Alliance members would form live stock associations, we could have numbers of them in every county where it is desirable to raise horses or mules. A jack costs from \$500.00 to \$800.00. In two or three neighboring Alliances there are fifty men who desire to raise mules; who have one mare each by each paying \$10.00 in advance, they could buy the jack for \$500.00, and after the first year the only cost would be the feed and attention of the jack, which would be very small, divided out among the owners. On the same plan, making the shares in number according to the number of mares each man desires to breed, draft, trotting or thoroughbred stallions can be introduced and an impetus given to stock raising that will keep millions of dollars at home.

S. B. ALEXANDER.
Enderly Farm, Jan. 18.

Read the article of Capt. S. B. Alexander on "Co-operation in Stock-Raising." It is full of sound, practical thought and will well repay you to study it.

AWARD OF FIELD CROP PREMIUMS.

By the Executive Committee of the North Carolina Agricultural Society on Crops of 1887.

COTTON.

No. 1. Largest yield of cotton per acre, on five acres, \$40.00; awarded to I. C. Williams, Esq., Winslow, Harnett county, for 3,359 pounds of lint cotton.

No. 2. Largest yield of cotton on one acre, \$20.00; to I. C. Williams, Esq., Winslow, Harnett county, for 1,045 pounds lint.

No. 4. Largest yield on one acre where Raleigh Standard guano is used, \$50.00. This premium was donated by the Raleigh Oil Mill and Fertilizer Company, and was awarded to J. W. Jones, Forestville, for 926 pounds lint.

No. 5. Next largest yield on one acre where Raleigh Standard guano is used, \$35.00; donated by the Raleigh Oil Mill and Fertilizer Company, and given to J. W. Holloway, Raleigh.

No. 6. Largest yield upon five acres, where Diamond State Super Phosphate is used, \$75.00; donated by the Diamond State Super Phosphate Company, and awarded to T. J. King, Louisburg, for 8,476 pounds seed cotton.

No. 8. Largest yield on one acre, where Diamond State Super Phosphate is used, \$40.00; donated by the same company, and awarded to I. C. Williams, Winslow, Harnett county, for 637 pounds lint.

TORACCO.

No. 17. Largest yield of tobacco from one acre where Diamond State Super Phosphate is used, \$75.00; donated by the Diamond State Super Phosphate Company and awarded to H. B. Bagwell, Esq., Garners, for yield of 1,478 pounds.

CORN, WHEAT, OATS, ETC.

No. 27. Largest yield of corn from five acres, \$40.00; to L. Banks Holt, Esq., Graham, for an average of 56 1-16 bushels of shelled corn per acre.

No. 30. Largest yield of corn made upon one acre of land, where Raleigh Standard guano is used, \$50.00 in gold, donated by the Raleigh Oil Mill and Fertilizer Company, and awarded to H. B. Bagwell, Esq., Garners, for 76 bushels on one acre.

No. 32. Largest yield of wheat from five acres, \$40.00; to L. Banks Holt, Esq., Graham, for an average of 24 bushels per acre.

No. 34. Largest yield of oats from five acres, \$40.00; to J. E. Wilfong, Esq., Hickory, for an average of 65 1-13 bushels per acre, (the area planted was 13 acres, and total yield 849 bushels).

No. 49. Largest yield of ground peas from one acre, \$15.00; to W. A. Berrier, Lexington, N. C., for yield of 185 bushels.

No. 57. Largest yield of either orchard grass, herd's grass, timothy or clover hay, or any of above mixed, on one acre, \$30.00; to L. Banks Holt, Esq., Graham, (10,582) ten thousand five hundred and eighty-two pounds, total mowings during season, from one acre.

KEEP OUT THEIR CLUTCHES.

The mortgage system among our farmers is no less a bane to them than is absenteeism the bane of Ireland. That absenteeism among the holders of claims against our farmers may cause trouble is not entirely out of the question the following remarks from the *Wilmington Messenger* on an Atlanta, Ga., dispatch will prove, and as there is no law to prevent foreign syndicates investing their money in Southern mortgages when the rate of interest is not usurious, we advise our farmers to make a law unto themselves and keep outside the clutches of such syndicates as are alluded to:

"An Atlanta, Ga., dispatch in a New York contemporary makes certain statements which may be exaggerated but which, nevertheless, demand consideration. In Georgia, for instance, many of the finest farm lands are heavily mortgaged, and the syndicates which hold the mortgages are mainly composed of English and Scotch capitalists. The rate of interest charged is twelve per cent. per annum, and the syndicates are increasing in number. Capital to be invested in such mortgages is being poured into the State although the District United States Court has decided such a rate of interest to be usurious, and has declared the loans forfeited. The host of land owners who have borrowed at this enormous rate have allowed many of their payments to lapse, until now it is utterly impossible for them to

meet the obligations they have incurred. The consequence is that unless the United States Court is sustained by the Supreme Court, many Georgia farms will go into the hands of the mortgagees. Including Georgia and some of the Southwestern States, more than two hundred million dollars is held in mortgages by this foreign syndicate.

"There is much to cause alarm in this statement, as well as in the other fact that, contrary to the intention of the government, some of the public lands have been acquired by foreigners. A bill pending in Congress will doubtless become law and will remedy the latter evil. But there is no law to prevent foreign syndicates from investing their money in Southern mortgages when the rate of interest is not usurious. And as money invested in England and Scotland does not, as a general thing, bring even legal interest in this country, there is every inducement for the foreign syndicates to continue their investments in the South. Now, we should be glad to welcome such capital to our midst in all legitimate enterprises. But usurious interest and the probability of absenteeism is a little too much for us."—*Daily Hornet*.

AGRICULTURAL LITERATURE.

One who regularly reads the agricultural papers, attends agricultural meetings and discussions, and keeps well informed on the issues of the agricultural press, but who does not mingle much with farmers in their homes, will be apt to have a higher idea of agricultural progress than the facts warrant. A catalogue of agricultural papers and books looks formidable, and considered in connection with the multiplicity of fairs and cat-tale shows over the country would seem to indicate that the high tide of agricultural progress had been reached. But a little observation about the homes of many well-to-do farmers dispels this illusion. The general management shows a clear advance over that of thirty or forty years ago. And yet very little, after all, to compare with the vast advance of the country in business methods and developments during that time. Machinery, as shown before, has been forced on the farmer, and in social culture there has been a gain; but as to farm methods not brought by machinery there is a great deal of stagnation, indifference and routine. One would rather expect to see agricultural papers, or some of the great weeklies with agricultural departments, in almost every family making pretensions to social standing, but, on the contrary, they are the exception rather than the rule. I do not believe that such papers are yet taken by one-quarter of the farmers of the country, and even in many cases where they are taken they seem to exert little or no influence; while as to agricultural libraries—that is, books collected and preserved for reference, such as physicians, lawyers, clergymen, editors, architects, &c., collect about them, it is doubtful if each town averages more than one or two. The influences that surround men are often very subtle, and no doubt our agricultural literature does influence thousands in unconscious ways, even in cases where outwardly men obstinately set themselves against it. The improved farming of one man among a dozen or two does its "fine work" in time and the paper which has only the boys for readers instead of the master of the house is silently instilling them with inquiring ideas, which bear fruit when their turn comes as landowners. Hence there is no reason to lessen effort in this direction, but rather to increase it.—*The Practical Farmer*.

Agricultural progress is always the key stone in the grand arch of universal prosperity.—It is the invariable door way to everything that is substantial and profitable in the business relations of the great world. The very important obligation imposed upon us by the indispensable industry of the farmers, deserves the favor of immediate and kindly consideration. There is no success in any department of work outside of a considerate recognition of our close relationship with and entire dependence upon this worthy class of laborers. As the best stimulus to agricultural enterprise and development, we would humbly recommend the formation of a Rockingham County Farmers' Association. Such an organization has been formed in the county of Wayne (the editor's home) and we can honestly certify to the valuable interest it has engendered and the great benefit it has bestowed upon the farmers of that section.—*Reidsville Times*.

POULTRY DEPARTMENT.

(We are pleased to announce to the readers of THE PROGRESSIVE FARMER that we have been so fortunate as to secure the efficient services of Mr. H. H. Weathers as Editor of this Department. He is one of the best informed men on this subject in the South. He desires that all communications and questions designed for his Department be addressed to "Poultry Column, PROGRESSIVE FARMER, Raleigh, N. C." He will most cheerfully answer all questions relating to poultry through this column. Write him.—EDITOR PROGRESSIVE FARMER.)

The Road to Success.

Unfortunately, a great many authors and writers on poultry breeding lay down a system or certain rules for the beginner to be governed by, and in many instances make it appear especially in the matter of feeding—a laborious task; such in fact that but few could or would be willing to follow. The fact is, there can be no invariable rule of action laid down to insure success, as there are so many contingencies occurring with those who attempt to breed poultry, that a course of action that will answer the purposes and surroundings of one person, will not do for another. Good blood of itself will not insure good progeny. A certain amount of intelligence and good judgment is requisite to know when and how to act, and in connection with that there must be industry.

In many instances fowls will get out of condition, fail to eat properly, or perhaps what they do eat does not nourish them and make them grow and look thrifty. In such instances it is not necessary to go to work and renovate the whole yards, or to dose them with half dozen medicines hoping to hit the right one to rectify the trouble, but by a clear insight to their real wants and true chicken sense the remedy is simple and easily applied, and yet the most experienced poultry breeder of the country could not answer the inquiry from such an one what to do, simply because the surroundings of no two poultry men are alike.

The only way out of such difficulties is to study and learn the nature of the fowls, watch their movements, the character of food they seek when at liberty, as instinct is unerring in directing the lower creation to that which is best for them when well and when ailing. Reason may and will err in forming conclusions for action, but instinct is unfailing, and to watch and study that in a flock of poultry is the best education the poultry breeder can have. From it he not only learns what and how best to feed them, but much can be gained in treatment of them when out of health. It does not require much labor to attend to poultry properly, but a thing that is necessary to be done today must not be put off until tomorrow, or perhaps it will be too late to have the desired effect. Constant care and attention is absolutely necessary, and there is no branch of industry that shows the effect of neglect sooner than a yard of poultry, and but few that proper care and attention will give better results than the same.

There are successful and unsuccessful lawyers, doctors, merchants and mechanics, and more of the latter than the former, and such is the case with the poultry breeders. They must be suited to the business; must possess a natural faculty for discerning and really anticipating the wants of the feathered family, and withal have a love for them, not simply a spasmodic fancy, brought about by a fine display of fine fowls in the hands of a neighbor. The beginner should learn to know himself in that respect, before going extensively into the business; and for that reason it is best to begin with but few varieties, and those most easily handled, and when he finds he is adapted to the business, and has been successful with those in hand, he may with propriety secure other varieties, but not until he has prepared himself with proper houses and yards for their accommodation.

Again, it is necessary for a breeder to possess some business tact in order to make it a success pecuniarily. He may be able to breed the best stock and have hundreds of good fowls. If that fact is not known and believed, they will be worth no more to him than common poultry.

Judicious advertising is the next important factor, and there is as much to learn in that respect to secure profits from good breeding as any other matter connected with the business. The poultry journals, of course, are the channels through which the breeder of fine fowls most largely circulated in sections where he may reasonably expect to get patrons, all these things properly considered and acted upon will insure success to the breeder of fine fowls.

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